RAW SEQUENCE LISTING DATE: 02/22/2001
PATENT APPLICATION: US/09/543,371 TIME: 12:14:29

Input Set : A:\14401027005.txt
Output Set: N:\CRF3\02222001\I543371.raw

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 4 <110> APPLICANT: Raghuram Kalluri
 6 <120> TITLE OF INVENTION: ANTI-ANGIOGENIC PROTEINS AND FRAGMENTS
 7       AND METHODS OF USE THEREOF
10 <130> FILE REFERENCE: 1440.1027-005
12 <140> CURRENT APPLICATION NUMBER: US 09/543,371
13 <141> CURRENT FILING DATE: 2000-04-04
15 <150> PRIOR APPLICATION NUMBER: US 09/335,224
16 <151> PRIOR FILING DATE: 1999-06-17
18 <150> PRIOR APPLICATION NUMBER: US 60/089,689
19 <151> PRIOR FILING DATE: 1998-06-17
21 <150> PRIOR APPLICATION NUMBER: US 60/126,175
22 <151> PRIOR FILING DATE: 1999-03-25
24 <160> NUMBER OF SEQ ID NOS: 18
26 <170> SOFTWARE: FastSEQ for Windows Version 4.0
28 <210> SEQ ID NO: 1
29 <211> LENGTH: 690
30 <212> TYPE: DNA
31 <213> ORGANISM: Homo sapiens
33 <220> FEATURE:
34 <221> NAME/KEY: CDS         /
35 <222> LOCATION: (1)...(687)
37 <400> SEQUENCE: 1
38 tct gtt gat cac ggc ttc ctt gtg acc agg cat agt caa aca ata gat       48
39 Ser Val Asp His Gly Phe Leu Val Thr Arg His Ser Gln Thr Ile Asp
40  1               5                  10                  15
42 gac cca cag tgt cct tct ggg acc aaa att ctt tac cac ggg tac tct       96
43 Asp Pro Gln Cys Pro Ser Gly Thr Lys Ile Leu Tyr His Gly Tyr Ser
44              20                  25                  30
46 ttg ctc tac gtg caa ggc aat gaa cgg gcc cat gga cag gac ttg ggc      144
47 Leu Leu Tyr Val Gln Gly Asn Glu Arg Ala His Gly Gln Asp Leu Gly
48          35                  40                  45
50 acg gcc ggc agc tgc ctg cgc aag ttc agc aca atg ccc ttc ctg ttc      192
51 Thr Ala Gly Ser Cys Leu Arg Lys Phe Ser Thr Met Pro Phe Leu Phe
52      50                  55                  60
54 tgc aat att aac aac gtg tgc aac ttt gca tca cga aat gac tac tcg      240
55 Cys Asn Ile Asn Asn Val Cys Asn Phe Ala Ser Arg Asn Asp Tyr Ser
56  65                  70                  75                  80
60 tac tgg ctg tcc acc cct gag ccc atg ccc atg tca atg gca ccc atc      288
61 Tyr Trp Leu Ser Thr Pro Glu Pro Met Pro Met Ser Met Ala Pro Ile
62                  85                  90                  95
64 acg ggg gaa aac ata aga cca ttt att agt agg tgt gct gtg tgt gag      336
65 Thr Gly Glu Asn Ile Arg Pro Phe Ile Ser Arg Cys Ala Val Cys Glu
66              100                 105                 110
68 gcg cct gcc atg gtg atg gcc gtg cac agc cag acc att cag atc cca      384
69 Ala Pro Ala Met Val Met Ala Val His Ser Gln Thr Ile Gln Ile Pro
70          115                 120                 125
72 ccg tgc ccc agc ggg tgg tcc tcg ctg tgg atc ggc tac tct ttt gtg      432
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Input Set : A:\14401027005.txt
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```
 73 Pro Cys Pro Ser Gly Trp Ser Ser Leu Trp Ile Gly Tyr Ser Phe Val
 74     130                 135                 140
 76 atg cac acc agc gct ggt gca gaa ggc tct ggc caa gcc ctg gcg tcc      480
 77 Met His Thr Ser Ala Gly Ala Glu Gly Ser Gly Gln Ala Leu Ala Ser
 78 145                 150                 155                 160
 80 ccc ggc tcc tgc ctg gag gag ttt aga agt gcg cca ttc atc gag tgt      528
 81 Pro Gly Ser Cys Leu Glu Glu Phe Arg Ser Ala Pro Phe Ile Glu Cys
 82                 165                 170                 175
 84 cac ggc cgt ggg acc tgc aat tac tac gca aac gct tac agc ttt tgg      576
 85 His Gly Arg Gly Thr Cys Asn Tyr Tyr Ala Asn Ala Tyr Ser Phe Trp
 86             180                 185                 190
 88 ctc gcc acc ata gag agg agc gag atg ttc aag aag cct acg ccg tcc      624
 89 Leu Ala Thr Ile Glu Arg Ser Glu Met Phe Lys Lys Pro Thr Pro Ser
 90         195                 200                 205
 92 acc ttg aag gca ggg gag ctg cgc acg cac gtc agc cgc tgc caa gtc      672
 93 Thr Leu Lys Ala Gly Glu Leu Arg Thr His Val Ser Arg Cys Gln Val
 94     210                 215                 220
 96 tgt atg aga aga aca'taa                                          690
 97 Cys Met Arg Arg Thr
 98 225
101 <210> SEQ ID NO: 2
102 <211> LENGTH: 229
103 <212> TYPE: PRT
104 <213> ORGANISM: Homo sapiens
106 <400> SEQUENCE: 2
107 Ser Val Asp His Gly Phe Leu Val Thr Arg His Ser Gln Thr Ile Asp
108  1               5                  10                  15
109 Asp Pro Gln Cys Pro Ser Gly Thr Lys Ile Leu Tyr His Gly Tyr Ser
110             20                  25                  30
111 Leu Leu Tyr Val Gln Gly Asn Glu Arg Ala His Gly Gln Asp Leu Gly
112         35                  40                  45
113 Thr Ala Gly Ser Cys Leu Arg Lys Phe Ser Thr Met Pro Phe Leu Phe
114     50                  55                  60
115 Cys Asn Ile Asn Asn Val Cys Asn Phe Ala Ser Arg Asn Asp Tyr Ser
116 65                  70                  75                  80
117 Tyr Trp Leu Ser Thr Pro Glu Pro Met Pro Met Ser Met Ala Pro Ile
118                 85                  90                  95
119 Thr Gly Glu Asn Ile Arg Pro Phe Ile Ser Arg Cys Ala Val Cys Glu
120             100                 105                 110
121 Ala Pro Ala Met Val Met Ala Val His Ser Gln Thr Ile Gln Ile Pro
122         115                 120                 125
123 Pro Cys Pro Ser Gly Trp Ser Ser Leu Trp Ile Gly Tyr Ser Phe Val
124     130                 135                 140
125 Met His Thr Ser Ala Gly Ala Glu Gly Ser Gly Gln Ala Leu Ala Ser
126 145                 150                 155                 160
127 Pro Gly Ser Cys Leu Glu Glu Phe Arg Ser Ala Pro Phe Ile Glu Cys
128                 165                 170                 175
129 His Gly Arg Gly Thr Cys Asn Tyr Tyr Ala Asn Ala Tyr Ser Phe Trp
130             180                 185                 190
```

RAW SEQUENCE LISTING DATE: 02/22/2001
PATENT APPLICATION: US/09/543,371 TIME: 12:14:29

Input Set : A:\14401027005.txt
Output Set: N:\CRF3\02222001\I543371.raw

Leu Ala Thr Ile Glu Arg Ser Glu Met Phe Lys Lys Pro Thr Pro Ser
195 200 205
Thr Leu Lys Ala Gly Glu Leu Arg Thr His Val Ser Arg Cys Gln Val
210 215 220
Cys Met Arg Arg Thr
225

<210> SEQ ID NO: 3
<211> LENGTH: 27
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: pET22b(+) forward oligonucleotide primer for Arresten
<400> SEQUENCE: 3
cgggatcctt ctgttgatca cggcttc 27

<210> SEQ ID NO: 4
<211> LENGTH: 27
<212> TYPE: DNA
<213> ORGANISM: Artificial Sequence
<220> FEATURE:
<223> OTHER INFORMATION: pET22b(+) reverse oligonuceotide primer for Arresten
<400> SEQUENCE: 4
cccaagcttt gttcttctca tacagac 27

<210> SEQ ID NO: 5
<211> LENGTH: 684
<212> TYPE: DNA
<213> ORGANISM: Homo sapiens
<220> FEATURE:
<221> NAME/KEY: CDS
<222> LOCATION: (1)...(681)
<400> SEQUENCE: 5

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gtc agc atc ggc tac ctc ctg gtg aag cac agc cag acg gac cag gag       48
Val Ser Ile Gly Tyr Leu Leu Val Lys His Ser Gln Thr Asp Gln Glu
 1               5                  10                  15

ccc atg tgc ccg gtg ggc atg aac aaa ctc tgg agt gga tac agc ctg       96
Pro Met Cys Pro Val Gly Met Asn Lys Leu Trp Ser Gly Tyr Ser Leu
            20                  25                  30

ctg tac ttc gag ggc cag gag aag gcg cac aac cag gac ctg ggg ctg      144
Leu Tyr Phe Glu Gly Gln Glu Lys Ala His Asn Gln Asp Leu Gly Leu
        35                  40                  45

gcg ggc tcc tgc ctg gcg cgg ttc agc acc atg ccc ttc ctg tac tgc      192
Ala Gly Ser Cys Leu Ala Arg Phe Ser Thr Met Pro Phe Leu Tyr Cys
    50                  55                  60

aac cct ggt gat gtc tgc tac tat gcc agc cgg aac gac aag tcc tac      240
Asn Pro Gly Asp Val Cys Tyr Tyr Ala Ser Arg Asn Asp Lys Ser Tyr
65                  70                  75                  80

tgg ctc tct acc act gcg ccg ctg ccc atg atg ccc gtg gcc gag gac      288
Trp Leu Ser Thr Thr Ala Pro Leu Pro Met Met Pro Val Ala Glu Asp
```

RAW SEQUENCE LISTING DATE: 02/22/2001
PATENT APPLICATION: US/09/543,371 TIME: 12:14:29

Input Set : A:\14401027005.txt
Output Set: N:\CRF3\02222001\I543371.raw

```
196                 85                  90                  95
198 gag atc aag ccc tac atc agc cgc tgt tct gtg tgt gag gcc ccg gcc      336
199 Glu Ile Lys Pro Tyr Ile Ser Arg Cys Ser Val Cys Glu Ala Pro Ala
200             100                 105                 110
202 atc gcc atc gcg gtc cac agt cag gat gtc tcc atc cca cac tgc cca      384
203 Ile Ala Ile Ala Val His Ser Gln Asp Val Ser Ile Pro His Cys Pro
204         115                 120                 125
206 gct ggg tgg cgg agt ttg tgg atc gga tat tcc ttc ctc atg cac acg      432
207 Ala Gly Trp Arg Ser Leu Trp Ile Gly Tyr Ser Phe Leu Met His Thr
208     130                 135                 140
210 gcg gcg gga gac gaa ggc ggt ggc caa tca ctg gtg tca ccg ggc agc      480
211 Ala Ala Gly Asp Glu Gly Gly Gly Gln Ser Leu Val Ser Pro Gly Ser
212 145                 150                 155                 160
214 tgt cta gag gac ttc cgc gcc aca cca ttc atc gaa tgc aat gga ggc      528
215 Cys Leu Glu Asp Phe Arg Ala Thr Pro Phe Ile Glu Cys Asn Gly Gly
216                 165                 170                 175
218 cgc ggc acc tgc cac tac tac gcc aac aag tac agc ttc tgg ctg acc      576
219 Arg Gly Thr Cys His Tyr Tyr Ala Asn Lys Tyr Ser Phe Trp Leu Thr
220             180                 185                 190
222 acc att ccc gag cag agc ttc cag ggc tcg ccc tcc gcc gac acg ctc      624
223 Thr Ile Pro Glu Gln Ser Phe Gln Gly Ser Pro Ser Ala Asp Thr Leu
224         195                 200                 205
226 aag gcc ggc ctc atc cgc aca cac atc agc cgc tgc cag gtg tgc atg      672
227 Lys Ala Gly Leu Ile Arg Thr His Ile Ser Arg Cys Gln Val Cys Met
228     210                 215                 220
230 aag aac ctg tga                                                   684
231 Lys Asn Leu
232 225
235 <210> SEQ ID NO: 6
236 <211> LENGTH: 227
237 <212> TYPE: PRT
238 <213> ORGANISM: Homo sapiens
240 <400> SEQUENCE: 6
241 Val Ser Ile Gly Tyr Leu Leu Val Lys His Ser Gln Thr Asp Gln Glu
242  1               5                  10                  15
243 Pro Met Cys Pro Val Gly Met Asn Lys Leu Trp Ser Gly Tyr Ser Leu
244             20                  25                  30
245 Leu Tyr Phe Glu Gly Gln Glu Lys Ala His Asn Gln Asp Leu Gly Leu
246         35                  40                  45
247 Ala Gly Ser Cys Leu Ala Arg Phe Ser Thr Met Pro Phe Leu Tyr Cys
248     50                  55                  60
249 Asn Pro Gly Asp Val Cys Tyr Tyr Ala Ser Arg Asn Asp Lys Ser Tyr
250 65                  70                  75                  80
251 Trp Leu Ser Thr Thr Ala Pro Leu Pro Met Met Pro Val Ala Glu Asp
252                 85                  90                  95
253 Glu Ile Lys Pro Tyr Ile Ser Arg Cys Ser Val Cys Glu Ala Pro Ala
254             100                 105                 110
255 Ile Ala Ile Ala Val His Ser Gln Asp Val Ser Ile Pro His Cys Pro
256         115                 120                 125
```

RAW SEQUENCE LISTING DATE: 02/22/2001
PATENT APPLICATION: US/09/543,371 TIME: 12:14:29

Input Set : A:\14401027005.txt
Output Set: N:\CRF3\02222001\I543371.raw

```
257 Ala Gly Trp Arg Ser Leu Trp Ile Gly Tyr Ser Phe Leu Met His Thr
258     130                 135                 140
259 Ala Ala Gly Asp Glu Gly Gly Gly Gln Ser Leu Val Ser Pro Gly Ser
260 145                 150                 155                 160
261 Cys Leu Glu Asp Phe Arg Ala Thr Pro Phe Ile Glu Cys Asn Gly Gly
262                 165                 170                 175
263 Arg Gly Thr Cys His Tyr Tyr Ala Asn Lys Tyr Ser Phe Trp Leu Thr
264             180                 185                 190
265 Thr Ile Pro Glu Gln Ser Phe Gln Gly Ser Pro Ser Ala Asp Thr Leu
266         195                 200                 205
267 Lys Ala Gly Leu Ile Arg Thr His Ile Ser Arg Cys Gln Val Cys Met
268     210                 215                 220
269 Lys Asn Leu
270 225
271 <210> SEQ ID NO: 7
272 <211> LENGTH: 27
273 <212> TYPE: DNA
274 <213> ORGANISM: Artificial Sequence
276 <220> FEATURE:
277 <223> OTHER INFORMATION: pET22b(+) forward oligonucleotide primer for
278       Canstatin
280 <400> SEQUENCE: 7
281 cgggatcctg tcagcatcgg ctacctc                                        27
283 <210> SEQ ID NO: 8
284 <211> LENGTH: 27
285 <212> TYPE: DNA
286 <213> ORGANISM: Artificial Sequence
288 <220> FEATURE:
289 <223> OTHER INFORMATION: pET22b(+) reverse oligonucleotide primer for
290       Canstatin
292 <400> SEQUENCE: 8
293 cccaagcttc aggttcttca tgcacac                                        27
295 <210> SEQ ID NO: 9
296 <211> LENGTH: 738
297 <212> TYPE: DNA
298 <213> ORGANISM: Homo sapiens
300 <220> FEATURE:
301 <221> NAME/KEY: CDS
302 <222> LOCATION: (4)...(735)
304 <221> NAME/KEY: misc_feature
305 <222> LOCATION: (160)...(735)
306 <223> OTHER INFORMATION: Tumstatin N53
308 <221> NAME/KEY: misc_feature
309 <222> LOCATION: (4)...(375)
310 <223> OTHER INFORMATION: Tumstatin 333
312 <221> NAME/KEY: misc_feature
313 <222> LOCATION: (376)...(735)
314 <223> OTHER INFORMATION: Tumstatin 334
316 <400> SEQUENCE: 9
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VERIFICATION SUMMARY DATE: 02/22/2001
PATENT APPLICATION: US/09/543,371 TIME: 12:14:30

Input Set : A:\I4401027005.txt
Output Set: N:\CRF3\02222001\I543371.raw